B. In the Claims

Please amend claims 18 and 19 without prejudice. Upon entry of the present amendment, the status of the claims will be as follows:

1. (original) An isolated nucleic acid sequence encoding an ANKTM1-related polypeptide, characterized as

encoding a temperature/pain sensitive non-selective cation channel protein that is activated by temperature below 20 °C;

being expressed in Calcitonin gene-related peptide- and substance P-positive neurons; and

comprising more than five ankyrin domains and a six transmembrane domain.

2. (original) The isolated nucleic acid sequence of claim 1 encoding a ANKTM1-related polypeptide comprising an amino acid sequence selected from SEQ ID NO:1, SEQ ID NO:2, and conservative variations thereof.

3. (original) The isolated nucleic acid sequence of claim 2, wherein the ANKTM1-related polypeptide comprises the amino acid sequence of SEQ ID NO:1, or a conservative variation thereof.

4. (original) The isolated nucleic acid sequence of claim 2 wherein the ANKTM1-related polypeptide comprises the amino acid sequence of SEQ ID NO:2, or a conservative variation thereof.

5. (original) A method for identifying an agent that modulates nociceptive response, the method comprising:

(a) contacting an organism containing an ANKTMl-related polypeptide encoded by the sequence set forth in claim 1 with an agent suspected of having nociceptive pain modulating activity under conditions that allow the agent and the polypeptide to interact;

(b) measuring a nociceptive response to administration of a nociceptive stimulus to the organism; and

(c) comparing the nociceptive response to a nociceptive response to the stimulus in the organism when not administered the agent,

wherein a change in the nociceptive response indicates an agent that modulates the nociceptive response.

6. (original) The method for claim 5, wherein the agent is selected from the group consisting of a peptide, a peptidomimetic, a chemical, and a nucleic acid sequence.

7. (original) The method for claim 5, wherein modulation of the nociceptive response is a decrease in pain and the change in the nociceptive response indicates that the agent decreases nociceptive pain.

8. (original) The method for claim 5, wherein the organism is selected from a non-human organism, a vertebrate, especially a murine species, and a mammal, especially a human.

9. (original) he method for claim 8, wherein the non-human organism is a mammalian cell.

10. (original) The method for claim 9, wherein stimulus is noxious cold and the response comprises a rise in $[Ca^{2+}]_i$ or $[Mg^{2+}]_i$ in the cell.

11. (original) A method for modulating nociceptive pain in an organism, the method comprising contacting a sentient organism containing a polypeptide sequence comprising an amino acid sequence selected from SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:4, and conservative variations thereof, with an effective amount of an agent that modulates operation of the polypeptide under conditions that allow the agent and the polypeptide to interact, thereby modulating nociceptive pain in the organism.

12. (original) The method for claim 11, wherein the polypeptide contains an ion channel and the agent modifies operation of the ion channel.

13. (original) The method for claim 11, wherein the modulating is a decrease in the nociceptive pain.

14. (original) The method for claim 11, wherein the organism is a human.

15. (original) A method for identifying an agent that modulates nociceptive pain, the method comprising:

(a) contacting an organism containing the polynucleotide sequence of claim 1 with a candidate agent under conditions that allow the agent and the polynucleotide to interact;

(b) measuring a nociceptive response to administration of a nociceptive stimulus to the organism; and

(c) comparing the nociceptive response to a nociceptive response in the organism when not administered the nociceptive stimulus,

wherein a change in the nociceptive response indicates the agent modulates nociceptive pain.

16. (original) The method of claim 15, wherein the agent is selected from the group consisting of a peptide, a peptidomimetic, a chemical, and a nucleic acid sequence.

17. (original) A method for reducing nociceptive pain in an organism, the method comprising contacting an organism containing the polynucleotide sequence of claim 1 with an effective amount of an agent that blocks function of the polynucleotide sequence under conditions that allow the agent and the polynucleotide to interact, thereby reducing nociceptive pain in the organism.

18. (currently amended) The method of claim 11 [[or 17]], wherein the agent is selected from the group consisting of a peptide, a peptidomimetic, a chemical, and a nucleic acid sequence.

19. (currently amended) The method of claim 11[[, 15 or 17,]] wherein the organism is a transgenic organism.

20. (original) The method for claim 17, wherein the organism is a mammal.

21. (original) An isolated polypeptide comprising an amino acid sequence selected from SEQ ID NO:1, SEQ ID NO:2 and conservative variations thereof.

22. (original) A binding molecule which is capable of binding to the polypeptide according to claim 21 with a dissociation constant < 1000nM.

23. (original) The binding molecule according to claim 22, which is a chimeric or humanized monoclonal antibody.